

REMARKS

Applicants wish to thank the Examiner for the allowance of Claims 21, 44, and 47-49 provided said claims are rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 1-21, 23-43, 45, and 46 were rejected under 35 U.S.C. 103(a) as being unpatentable over Asano et al (4,997,874) in view of Hutchings et al (5,283,015). Applicants respectfully traverse this rejection

Asano discloses an aqueous suspension of a multivalent-metal-modified salicylic acid resin, which is suitable for use in the production of color-developing sheets for pressure-sensitive recording paper sheets. The pressure-sensitive copying paper is generally composed of a sheet (CB-sheet) coated with microcapsules of a non-volatile organic solvent containing an electron-donating organic compound (so-called pressure-sensitive dyestuff) and another sheet (CF-sheet) coated with an aqueous coating formulation containing an electron-attracting color-developing agent. The CB-sheet and CF-sheet are arranged with their coated sides maintained in a contiguous relation. The microcapsules are ruptured, for example, by a writing or printing impression of a ballpoint pen or a typewriter, whereby the solution of the pressure-sensitive dyestuff is caused to flow out of the capsules and is then brought into contact with the color-developing agent and a color is hence produced.

It is suggested that the multivalent-metal-modified salicylic acid resin particles may be dispersed with three different classes of materials, one of which is water-soluble anionic high-molecular compounds composed of polymers or copolymers comprising particular styrenesulfonic acid derivatives as their essential components. It is also suggested that two or more of these salts may also be used in combination.

As noted by the Examiner, Asano is silent with respect to the molecular weights of the styrenesulfonic acid polymers. There is no suggestion or recognition that if two or more of the polystyrene compounds are used that they must be different molecular weights and that the ratio of the weight average polymer molecular weight of the first polymer to the second polymer should be greater than 2.

In contrast to Applicants' invention, Asano relates to making dispersions of metal-modified salicylic acid resin developer particles, not to making dispersions of microcapsules. These are two entirely different systems. Not only are developers different from microcapsules chemically, they are different in their physical composition. The salicylic acid resin developer particles are solid particles of one compound. The microcapsules of the invention comprise a water immiscible material contained within an encapsulating wall of a polymer. Not only is the material being dispersed different, the method of dispersion is different. The developer particles require a step of fine wet grinding, the microcapsules are dispersed using an emulsification process. Furthermore, the imaging systems are totally different. Asano relates to a system utilizing microcapsules that are not photohardenable. They are merely ruptured by pressure. In contrast, Applicants' preferred embodiment utilizes photohardenable microcapsules.

Stabilizers are not universal, and what may be useful in one system is not necessarily useful to stabilize a completely different composition. One skilled in the art would not expect that the method described in Asano for making developer particles dispersions would be useful in making microcapsules. Therefore, the combination of Asano and Hutchings is improper.

Hutchings discloses a process for forming microcapsules having discrete capsule walls comprising the steps of: forming an emulsion of an oily core material phase in a continuous aqueous phase, said oily core material phase including isocyanatoacrylate or cyanoacrylate prewall reactants which react with said aqueous phase to form a pre-wall material around said oily core material phase; and enwrapping particles of said oily core material phase in an amine-formaldehyde condensation product produced by in situ condensation of an amine and formaldehyde. It is suggested that the aqueous phase contains emulsifiers and system modifiers and that, for making melamine-formaldehyde microcapsules, a combination of methylated polygalacturonic acid and sulfonated polystyrenes is preferred. It is further suggested that useful sulfonated polystyrenes are generally characterized by a sulfonation degree of over 85% and preferably over 95% and that the molecular weight of the sulfonated polystyrene is preferably greater than 100,000 and more preferably about 500,000-1,000,000.

Hutchings, as a threshold matter, does not suggest the use of two sulfonated polystyrenes. It certainly does not indicate or suggest that two sulfonated polystyrenes having significantly different molecular weights be used. Even in teaching the general range of molecular weights for a single sulfonated polystyrene, Hutchings teaches away from the current invention in that it prefers the use of polymers having a molecular weight of greater than 500,000. In contrast, the current invention prefers the use of at least one polystyrene having a molecular weight of less than 300,000.

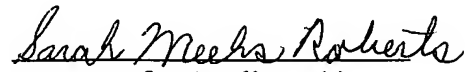
Hutchings clearly does not disclose or suggest the current invention. As noted above the combination of Asano and Hutchings is an improper combination of references. However, even if the combination of references were proper, the combination of Hutchings and Asano does not make the current invention obvious.

In making such a combination, one would first have to choose to use a stabilizer from Asano that is utilized to make a dispersion of an entirely different chemical and physical composition. Then one would have to choose to utilize two or more polymers or copolymers comprising particular styrenesulfonic acid derivatives as their essential components. Then, although neither reference suggests or provides motivation for such a choice, one would have to choose to use two polystyrenes having different molecular weights, the ratio of the weight average polymer molecular weight of the first polymer to the second polymer being greater than 2. For the preferred embodiment of the current invention one would then have to choose one polystyrene having a weight average molecular weight greater than 500,000 and a second polystyrene having a weight average molecular weight less than 300,000, even though Hutchings prefers molecular weights over 500,000. It is only using hindsight that such a string of choices would be feasible.

Therefore, Applicants submit that the current invention is not obvious in light of Asano in view of Hutchings.

It is believed that the foregoing is a complete response to the Office Action and that the claims are in condition for allowance. Favorable reconsideration and early passage to issue is therefore respectfully requested.

Respectfully submitted,


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If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.